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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/431,469	11/01/1999	DAVID M. ARMISTEAD	VPI/95-09-DI	8756

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EXAMINER	
MORAN, MARJORIE A	
ART UNIT	PAPER NUMBER
1631	14

DATE MAILED: 12/03/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/431,469	Applicant(s) ARMISTEAD ET AL.	
	Examiner Morjorie Moran	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *detailed action* .

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

All rejections and objections not repeated below are hereby withdrawn.

Claim Rejections - 35 USC § 101

Amended claims 19-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant's arguments filed 9/24/01 have been fully considered but they are not persuasive. Applicant argues that a step of outputting a quantified association to suitable hardware, as newly recited in the amended claims, represents a useful, concrete and tangible result in the claimed methods. In response it is noted, as previously set forth in the office action of 6/20/01, that the claimed methods recite computation and analysis steps, wherein the "result" is a mere rearrangement of data, and does not, in itself, represent a useful, concrete and tangible result. Outputting a result of a method which merely represents mathematical manipulations; e.g. to a piece of hardware, is equivalent to writing down the result of a mathematical equation, calculated mentally, on a piece of paper. The mere act of transferring the result to "hardware", when neither the steps of the method nor the result represent statutory subject matter, does not render the method or result statutory.

As set forth in MPEP 2106 IV.B.2 (b) (ii):

Examples of claimed processes that do **not** achieve a practical application include:

- step of "updating alarm limits" found to constitute changing the number value of a

variable to represent the result of the calculation (Parker v. Flook, 437 U.S. 584, 585, 198 USPQ 193, 195 (1978));

- final step of "equating" the process outputs to the values of the last set of process inputs found to constitute storing the result of calculations (In re Gelnovatch, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979); and

- step of "transmitting electrical signals representing" the result of calculations (In re De Castelet, 562 F.2d 1236, 1244, 195 USPQ 439, 446 (CCPA 1977) **("That the computer is instructed to transmit electrical signals, representing the results of its calculations, does not constitute the type of post solution activity' found in Flook, [437 U.S. 584, 198 USPQ 193 (1978)], and does not transform the claim into one for a process merely using an algorithm. The final transmitting step constitutes nothing more than reading out the result of the calculations.")**); and

-step of displaying a calculation as a gray code scale (In re Abele, 684 F.2d 902, 908, 214 USPQ 682, 687 (CCPA 1982)). Emphasis added by examiner.

As previously set forth and reiterated above, the claimed methods do not, in themselves, produce a useful, concrete, and tangible results. For examples of "computer-related" methods which recite manipulation of data AND which produce a concrete, tangible, and useful result, applicant's attention is directed State Street (47 USPQ2d 1596 at 1601), wherein the method claimed was held to be statutory because the transformation of data recited in the claims resulted in a final share price, which was held to be concrete, tangible and useful result. Similarly, the decision in Alappat (31 USPQ2d at 1557) held a smooth waveform produced by transformation of data was a

useful, concrete, and tangible result. In contrast, the instant claims recite a method "for evaluating" wherein a "fitting operation" is performed by "computational means", and the results are "analyzed" quantitatively. The instant claims do not recite any specific result, nor any actual transformation of data which would produce a result that is concrete, tangible, and useful. Evaluation and analysis are not steps of transforming data. A "fitting operation", as taught by the instant specification, appears to be one of either "matching" or "docking" a three-dimensional model of a chemical entity to a binding pocket, akin to fitting puzzle pieces together; or appears to be one of energy minimization (e.g. as set forth on pages 20-21). Neither appears to be a transformation of data which provides a useful, concrete, and tangible result.

For the reasons set forth above and previously set forth in the office action of 6/20/01, the claims do not recite statutory subject matter, and are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over HENDRY (US 5,705,335, filed 11/26/1993).

HENDRY teaches a method to evaluate the ability of a chemical compound to associate with another (the "degree of fit" of binding to a pharmacophore) wherein a ligand is docked (fitting operation) into a binding site, and the results evaluated (col. 7, lines 9-24). HENDRY also teaches "outputting" results of his fitting method (Figures 1-4), thereby making obvious all of the steps of the claimed method. It is noted that as the structure coordinates recited in the claims do not have a functional relationship with the hardware recited in the claims, they do not distinguish the invention from the prior art in terms of patentability. The structure coordinates are nonfunctional descriptive matter (see MPEP 2106), and do not *functionally* interact with any hardware or software in the claimed methods. The claimed methods therefore may be performed using any set of structure coordinates. As set forth in In re Gulack, 703 F. 2d 1381 (217 USPQ 403,404), when there is no functional relationship between matter which is, by itself, non-statutory subject matter and a substrate (e.g. a computer), there is no reason to give patentable weight to the content (of the non-statutory subject matter). The structure coordinates recited in the claims do not therefore distinguish the claimed method from the prior art in terms of patentability, and the claims are obvious.

Conclusion

Claims 19-24 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (703) 305-2363. The examiner can normally be reached on Monday to Friday, 7:30 am to 4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (703) 308-4028. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4556 for regular communications and (703) 308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to a patent analyst, Dianiece Jacobs, whose telephone number is (703) 305-3388.

Marjorie A. Moran
November 30, 2001

MICHAEL P. WOODWARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600